(Adopted March 6, 2009) (Amended June 4, 2010)

PROPOSED AMENDED RULE 1144 ~~VANISHING OILS,~~ METALWORKING FLUIDS AND DIRECT-CONTACT LUBRICANTS~~RUST INHIBITORS~~

(a) Purpose

The purpose of Rule 1144 is to reduce volatile organic compound (VOC) emissions from the use of ~~vanishing oils~~metalworking fluids and direct-contact lubricants ~~and rust inhibitors~~ at industrial facilities.

(b) Applicability

The rule applies to all persons who use metalworking fluids and direct-contact lubricants ~~vanishing oils and rust inhibitors that come into direct contact with~~on products and parts during manufacture and assembly; and all manufacturers and suppliers who supply, sell, or offer for sale metalworking fluids and direct-contact lubricants ~~vanishing oils and rust inhibitors~~ for use at industrial facilities. This rule shall apply to all VOC containing fluids used for ~~metal working~~metalworking including ~~,~~ metal removal, metal forming, metal treating or lubricating operations where the metalworking fluid or direct-contact lubricant ~~vanishing oil~~ comes into direct contact with products and parts including, but not limited to, blanking, broaching, coining, cutting, drilling, drawing, forming, forging, grinding, heading, honing, lapping, marquenching, milling, piercing, quenching, roll forming, rolling, stamping, tapping, threading, turning and wire drawing. The rule also applies to VOC containing fluids used for metal protection, including rust and corrosion prevention and inhibition, ~~–~~during the manufacture and assembly of products and parts. The provisions of this rule shall not apply to repair, maintenance or research operations.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ASSEMBLED AIRCRAFT is any machine that is a complete vehicle, assembly of parts at an aircraft assembly facility or major partial section including wheel wells, fuselage sections, pressure decks, wings, blades or cockpit, designed to travel through the air, without leaving the earth's atmosphere, including airplanes, balloons, dirigibles, helicopters and missiles.

(2) DIRECT-CONTACT LUBRICANT is a fluid that comes into direct contact with the product or part during manufacturing or assembly and is used to reduce heat and friction and to prolong the life of machine tools and machinery. A direct-contact lubricant is not a metal forming fluid and is not a metal removal fluid.

(3) EXEMPT COMPOUND is as defined in Rule 102.

(4) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = Weight of volatile compounds in grams
W_w = Weight of water in grams
W_{es} = Weight of exempt compounds in grams
V_m = Volume of material in liters

(5) LAPPING is a manufacturing method that employs particles of an abrasive material, suspended in a liquid carrier, between rotating plates.

(6) MANUFACTURING is the use of tools and labor to make things for sale.

(7) METAL FORMING FLUID is a fluid used at the tool and workpiece interface to facilitate the flow of metal over the tool and to extend the life of the tool. Common metal forming operations include, but are not limited to, blanking, coining, drawing, forming, forging, heading, piercing, roll forming, stamping and wire drawing.

(8) METAL PROTECTING FLUID is fluid that inhibits or prevents the corrosion of metal surfaces. It is applied independently of any other metalworking, lubricating or cleaning application.

(9) METAL REMOVAL FLUID is a fluid used at the tool and workpiece interface to facilitate the removal of metal from the part, cool the part and tool, extend the life of the tool, and to flush away chips and debris. Common metal removal operations include, but are not limited to, broaching, cutting, drilling, grinding, honing, lapping, milling, tapping, and threading and turning.

(10) METAL TREATING FLUID is a fluid used to remove heat from metal parts, affect their hardness, and/or change the grain structure of the metal.

Common metal treating operations include, but are not limited to, marquenching and quenching.

(711) METAL WORKINGMETALWORKING FLUID is a fluid that facilitates operations involving the working, protecting or modification of metals, including metal forming, protecting, treating and removal, functioning in the tool and workpiece interface used to improve product quality and carry away debris and may consist of straight oils, soluble emulsifiable oils and synthetic and semi-synthetic fluids.

(12) MILITARY SPECIFIED PRESERVATIVE is a preventative or protecting fluid qualified under military specification and used in a military application.

(13) PRECISION METAL REMOVAL FLUID is a fluid used for carbide grinding machine tools, where the manufacturer of the machine tool specifies the viscosity of the fluid, or for machining of aluminum or magnesium in single or multiple spindle automatic machines.

(8) RUST INHIBITOR is an inhibitor, preventative or protectant used to prevent the corrosion of metal surfaces. It is applied independently of any metal working, metal removal, lubricating or cleaning application.

(914) SINKER ELECTRICAL DISCHARGE MACHINING (EDM) is a method of removing material by a series of rapid recurring electric arcing discharges between an electrode and the workpiece, in the presence of an energetic electric field, in an insulating oil.

(1015) SPACE VEHICLE is a vehicle designed to travel beyond the earth's atmosphere.

(1116) SOLICIT is to require for use or to specify, by written or oral contract.

(17) SUPER COMPLIANT MATERIAL is any material containing 50 grams or less of VOC per liter of material.

(1218) VANISHING OIL is a direct-contact lubricant, or metal workingmetalworking fluid or oil with a flash point less than 200 °F (93°C).

(1319) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(d) Requirements

(1) VOC Content

A person shall not use or solicit the use of any metal~~vanishing oil or rust inhibitor~~working fluid or direct-contact lubricant that has a VOC content in excess of the limits contained in Table A of this paragraph:

Table A – Fluid Categories and VOC Limits

FLUID	EFFECTIVE 1/1/2010 VOC g/l (lb/gal)	EFFECTIVE 1/1/2011 VOC g/l (lb/gal)	EFFECTIVE 1/1/2012 VOC g/l (lb/gal)
(A) Vanishing Oil	50 (0.42)		
(B) ~~Rust Inhibitor~~Metalworking Fluid	~~300 (2.50)~~		~~50 (0.42)~~
(i) Metal Forming			75 (0.63)
(ii) Metal Removal			
(a) General			75 (0.63)
(b) Precision Metal Removal			130 (1.08)
(iii) Metal Treating			75 (0.63)
(iv) Metal Protecting			
(a) General	300 (2.50)		50 (0.42)
(b) Military Specified Preservative		340 (2.83)	
(C) Direct-Contact Lubricant			50 (0.42)

(2) Prohibition of Sale

(A) No person shall manufacture for use, offer for sale, sell or distribute directly to a person any metal~~vanishing oil or rust inhibitor~~working fluid or direct-contact lubricant for use in the District which, at the time of sale or manufacture, contains more VOC per liter of material after recommended dilution, and after the effective date, as listed in Table A.

(B) The prohibition of sale shall not apply to any manufacturer or supplier of metalvanishing oil or rust inhibitorworking fluid or direct-contact lubricant provided the product was sold to an independent distributor that was informed in writing by the manufacturer or supplier that the metalworking fluid or direct-contact lubricant is not to be used in the South Coast Air Quality Management District.:

(i) The product was sold to an independent distributor that was informed in writing by the manufacturer about the compliance status of the product with Rule 1144.

(C) The prohibition of sale shall not apply to any manufacturer or supplier of metalworking fluid or direct-contact lubricant used incollected and directed to an emission control system pursuant to subdivision (e).

(3) Sell-Through Provision

Any metalvanishing oil or rust inhibitorworking fluid or direct-contact lubricant that is manufactured prior to the effective date of the applicable limit, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to six months after the specified effective date.

(e) Control Equipment

In lieu of complying with the requirements of subdivision (d), aA person may use metalworking fluids and direct-contact lubricants in excess of the limits provided all metalworking fluids and direct-contact lubricants are controlled by operate an emission control system providedthat meets the following:

(1) The control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 5 PPM VOC by volume calculated as carbon with no dilution; and

(2) The emission collection system has been demonstrated to collect at least 90 percent by weight of the VOC emissions generated by the sources of VOC emission.

(f) Administrative Requirements

(1) Effective January 1, 2010, containers, for sale or distribution, of any vanishing oil or rust inhibitormetal protecting fluid subject to this rule

shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such vanishing oils or ~~rust inhibitors~~metal protecting fluids shall file with the Executive Officer of the District an explanation of each code.

(2) Effective January 1, 2012, containers for sale or distribution, of any metalworking fluid or direct-contact lubricant subject to this rule shall display the VOC content and either the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturer or supplier of such fluids shall file with the Executive Officer of the District an explanation of each date code.

(3) For each calendar year (January 1 through December 31) beginning with 2011 and continuing with each subsequent calendar year until 2013, a metalworking fluid or direct-contact lubricant manufacturer or supplier shall submit to the District by April 1 of the following calendar year, an annual quantity and emissions report for products subject to the rule sold within the District. The report format shall be approved by the Executive Officer, and shall include the annual sales volume and VOC content of metalworking fluids and direct-contact lubricants sold or distributed within the District.

(g) Recordkeeping Requirements

(1) ~~Records shall be maintained pursuant to Rule 109 for all applications subject to this rule. Vanishing oils and rust inhibitors that contain 50 grams of VOC per liter of material or less shall be considered Super Compliant Materials per Rule 109 (b)(6).~~ An owner or operator shall develop and maintain a VOC listing of all metalworking fluids and direct-contact lubricants purchased for use at the facility. The list shall be kept in a format specified by the District or in an equivalent format and shall contain the following data:

(A) Name and AQMD facility identification number (if applicable) of the stationary source;

(B) For each metalworking fluid and direct-contact lubricants:

(i) Manufacturer, a manufacturer product number, ID, or code that uniquely identifies the VOC-containing fluid, and a fluid category;

(ii) Grams of VOC per liter of material;

The VOC Listing shall be updated within seven (7) calendar days from the date of receipt of a new metalworking fluid or direct-contact lubricant at the facility.

(2) An owner or operator shall record the following information on a monthly usage log in a format specified by the District or in an equivalent format:

(A) Name and AQMD identification number of the facility;

(B) Manufacturer product number, ID, or code from the VOC Listing;

(C) Amount of each VOC-containing fluid purchased on a monthly basis;

(D) Initials of the person entering the data; and

(E) Date the data was entered.

(3) An owner or operator of a stationary source shall maintain and make available to a District representative upon request all of the information necessary to verify the amount of metalworking fluids and direct-contact lubricants used at the facility including, but not limited to purchase records identifying the supplier's name, date, and amount purchased.

(4) In lieu of meeting paragraphs (g)(1), (g)(2) and (g)(3), records may be maintained pursuant to Rule 109 for all applications subject to this rule.

(~~2~~5) Any person using an emissions control system as a means of complying with this rule shall maintain daily records of all key system parameters, including hours of operation, temperatures, pressures and flow rates, that are necessary to ensure control efficiency requirements.

(~~3~~6) Manufacturers utilizing the provision of subparagraph (d)(2)(B) shall maintain notification letters for five (5) years, which shall be made available to the Executive Officer or designee upon request.

(7) Manufactures or suppliers of metalworking fluids and direct-contact lubricants shall maintain records to verify data used to determine VOC content in preparing their annual quantity and emissions report. The records shall be maintained for five (5) years and made available upon request by the Executive Officer. Such records shall include:

(A) Laboratory reports; or

(B) VOC content calculations.

(h) Test Methods and Procedures

The following test methods and procedures shall be used to determine compliance with this rule. Other applicable test methods may be used if they are determined

to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board and the U.S. Environmental Protection Agency. When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(1) Determination of VOC Content

{The Governing Board will choose either Option 1 or Option 2 below.}

(A) Option 1; ASTM E 1868 - 10 Standard Test Method for Loss-On-Drying by Thermogravimetry. Quality assurance and quality control procedures shall be conducted using SCAQMD Additional Requirements to ASTM Standard Test Method E 1868-10 for Metalworking Fluids and Direct-Contact Lubricants.

OR

Option 2; SCAQMD Method 319-10 Determination of Volatile Organic Compounds (VOC) in Metalworking Fluids and Lubricants by Thermogravimetry.

~~USEPA Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A).~~ Water content shall be determined by ASTM D 4017 (Standard Test Method for Water in Paints and Paint Materials by Karl Fischer Method) if applicable to the specific sample. The exempt solvent content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,

~~(B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.~~

(~~C~~B) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (d), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the USEPA, CARB, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Flash Point

ASTM D93 - 07 Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.

(3) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by U.S. EPA Method 204 "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a U.S. EPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in U.S. EPA technical guidance document "Guidelines for Determination Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the U.S. EPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of U.S. EPA Method 204 through 204F; or

(ii) The SCAQMD "Protocol for Determination of Volatile organic Compounds (VOCs) Capture efficiency."

(B) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by U.S. EPA's Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and U.S. EPA's Test Methods 25, 25A, SCAQMD Method 25.1 for the determination of Total Gaseous Non-Methane Organic Emissions as Carbon, or

SCAQMD Method 25.3 for the determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable.

(C) The overall efficiency of an emission control system shall be determined using the following equation:

Overall Efficiency

= (Capture Efficiency) x (Control Equipment Efficiency)/100

(i) Exemptions

(1) Paragraph (d)(2) and subdivision (f) shall not apply to metal~~vanishing oils and rust inhibitors~~working fluids and direct-contact lubricants subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.

(2) Until January 1, 2011, paragraph (d)(1) shall not apply to ~~vanishing oils and rust inhibitors~~metalworking fluids and direct-contact lubricants subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.

(3) The provisions of this rule shall not apply to metal~~vanishing oils and rust inhibitors~~working fluids and direct-contact lubricants sold in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.

(4) The provisions of subdivisions (d) and (f) of this rule shall not apply to metal~~vanishing oils and rust inhibitors~~working fluids and direct-contact lubricants subject to VOC limits in other Regulation XI rules.

(5) The provisions of subdivision (d) shall not apply to the following operations:

(A) Lapping;

(B) Sinker EDM;

(C) ~~Rust inhibitors and vanishing oils applied to A~~avionics and assembled aircraft;

(D) Space vehicle components;

(E) Fluids utilizing the control device option in subdivision (e);

(F) Until January 1, 2011, ~~rust inhibitors~~metal protecting fluids used in association with a military specification, military standard,

Department of Defense document or Production Part Approval Process (PPAP). The specifications for the part shall be made available to the Executive Officer upon request.

(6) The provisions of subdivision (g) shall not apply to any Super Compliant Material(s). This exemption shall only apply to facilities that demonstrate that total permitted and non-permitted facility VOC emissions do not exceed 4 tons in any calendar year, including emissions from the Super Compliant Material, as shown by annual purchase records.

(7) Paragraphs (d)(1) and (d)(2) shall not apply to the use of dimethyl carbonate used as a cooling solvent in computed numerically controlled (CNC) machines where permeable media are used to maintain a vacuum that holds the part in place during cutting provided that the equipment is enclosed and an exhaust fan discharges the exhaust air from the equipment outside of the building.